

A new Genus and four new Species of Aphididae (Rhynch.).

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(Plate XVI.)

ATARSOS n. gen.

Lice in all stages without tarsi; a small pulvillus-like pad on the distal end of each tibia; moderately hairy, the hairs being capitate in all stages; cornicles short, tapering; antennæ in all adults much shorter than the body and with numerous sensoria on joints 3, 4 and 5, and with spur little longer than the joint bearing it.

Type: *Atarsos grindeliae*, n. sp.

Through the kindness of Mr. J. T. Monell, I have been able to examine mounted specimens, alate and pupæ, of *Mastopoda pteridis* Oest. Striking characters are the 6-jointed antenna with the very long third and short fifth joints, the very long filament, the long cornicles convex on the free end without flange, and the vestigial tarsi on all legs.

Atarsos grindeliae n. sp. (Plate XVI, Figs. 1-6.)

Described from specimens taken on leaves of *Grindelia squarrosa*, at Fort Collins, Colo., May 23, 1911.

Alate Viviparous Female.—Color of abdomen dull or dusky green; head, thorax above and below, distal ends of femora, tibiae and antennæ black or blackish; eyes very dark red; on the dorsum are numerous broken transverse dusky dashes, and lateral spots. Length of body 1.60 to 2 mm.; antenna 1.10 mm.; joint 3 about equaling joints 4, 5 and 6 together (occasionally joints 3 and 4 are connate); joints 3, 4 and 5 with tuberculate sensoria about as follows: III, .40; IV, .18; V, .13; VI, .09; spur, .13 mm; terminal joints very scabrous; venation normal, the veins rather heavy and dusky; cornicles stout, cylindrical, sharply constricted close to the rather broad flange, .15 mm. in length; cauda short, broad at base and tapering to a moderately acute apex; all tibiae ending in a light pad, depressed at the center and protruding on the ventral surface and entirely without tarsi; hairs on all parts, except the cauda, capitate.

Apterous Viviparous Female.—Pale shining green in color, with antennae, at least in distal half, distal ends of tibiae and cornicles dusky to blackish; eyes red; cornicles distinctly stouter at base than

at tip; antennae about the same as in the alate form; numerous sensoria on joints 3, 4 and 5; joints 3 and 4 often coalesced on one or both sides.

The most striking peculiarity of this louse is the entire absence of tarsi in all stages. There seems to be no modification of form too difficult for nature to bring about if it is needed and if sufficient time be given. This louse is undoubtedly better able to travel over the sticky surface of the *Grindelia* leaves without tarsi than with them. Yet two other species of lice having well developed tarsi get along well enough on the same plant.

On June 17 and 18 at Fort Collins the lice were common among the young, tender leaves of the host plant, but no alate lice or pupæ could be found. The alate lice were migrating freely two weeks ago. A rather common species from Fort Collins to Denver at least, and taken many times by both Mr. L. C. Bragg and the writer.

Brachycolus tritici n. sp. (Plate XVI, Figs. 7-9.)

Alate Viviparous Female.—Specimens taken from leaves of Colorado blue-stem, *Agropyron glaucum*, at Fort Collins, Colo., May 24, 1911, by L. C. Bragg.

Head, thorax above and below, antenna, except basal portion of 3rd joint, eyes, tarsi, distal ends of tibiae, and the greater portion of the distal ends of the femora, cauda and anal plate black, and powdered with white. Wing veins also conspicuously black, stigma blackish and rather narrow and stigmal vein nearly straight; cubital twice forked; abdomen light green, the color of the leaves of the grass and lightly powdered with white; cauda stout, broad in basal portion, pointed, and more or less dusky; cornicles a little yellowish or brownish and slightly raised above the surface, not as long as broad; vertex broad and but little convex; no antennal tubercles; length of body 1.30 to 1.50 mm.; antenna .70 to .80 mm.; joints 4, 5 and 6 about equal; spur a little longer than joint 4; joint 3 a little shorter than joints 4 and 5 together. There is an irregular row of about 8 sensoria on distal two-thirds of joint 3 and about 2 sensoria on joint 4; length of wing, 2.30 mm.

Apterous Viviparous Female.—Body long and narrow, nearly parallel-sided, and rather densely covered with a fine white powder; length about 1.88 mm.; width .60 mm. The general color is pale greenish to

pale yellowish; the head, distal one-half of antenna, most of the rostrum, the anal plates, cauda and legs, especially the tarsi, dusky; eyes black. In most specimens an impressed line just inside the lateral margin extends nearly the full length of the thorax and abdomen. The legs are very short, the hind femora measuring about .34 mm.; the hind tibiae .43 mm.; length of antenna .59 mm.; joint III slightly the longest; joints IV, V and VI sub-equal; beak just surpassing the second coxae; cauda rather broad and flat, pointed, a little longer than the width at the base; length .10 mm.; cornicles very small, tuberculate, located upon joint 6; in color like the body or a little dusky.

Described from specimens taken on wheat at Fort Collins, October 10, 1908. Winged specimens have also been taken early in June and in July.

Apterous Oviparous Female.—Apparently the apterous oviparous females are exactly like the viviparous form. At least they are so nearly alike that I do not notice any marked difference in characters.

Apterous Male.—A few males were present in the colony studied. They are more yellow in color with less powder upon their bodies. The antenna is entirely black or blackish, and the other parts that are dusky in the females are dark in color in the males. Length about 1.10 mm.; width .40 mm.; length of antenna and the various joints as in the viviparous female above, or slightly shorter; the rostrum attaining the third coxae; hind femora, including trochanter .29 mm.; tibiae .40 mm. I have not been able to distinguish any sensoria upon the antenna except the cluster at the distal end of joint 6.

This is seemingly a rather rare species occurring upon grasses, and has been taken several times by L. C. Bragg upon the leaves of blue-stem, *Agropyron glaucum*, and upon wheat during the summer months in the vicinity of Fort Collins.

***Chaitophorus agropyronensis* n. sp.** (Plate XVI, Figs. 10-12.)

This louse differs so much in general appearance from typical *Chaitophorus* species that it scarcely seems right to place it here, but I dislike to establish a new genus for it.

Alate Viviparous Female.—General color of abdomen, green; the black or blackish parts are head, thorax above and below, antenna (except basal portion of joint 3), tarsi, distal ends of tibiae, entire femora, cornicles, a spot on each lateral margin of the abdominal segments, a rather broad but much interrupted band on the abdominal segments after the first, and narrow transverse dashes between the segments, and the knobbed cauda. The wing veins and the stigma are

also black or blackish. The body is everywhere set with stout gray hairs much as in the apterous form, and is also everywhere covered with a white pulverulence. The cornicles are conical, the length being less than the basal diameter; wing venation normal, the cubital usually with two forks but the second fork sometimes lacking; the cubital cell shallow, the vein being somewhat recurved; legs short and stout; length of body 1.65 to 1.90 mm.; wing 2.50 mm.; antenna .65 mm.; hind tibiae .60 mm.; tarsi unusually long, measuring .20 mm.; joints 3 and 4 of antenna coalesced into one with no indication of the union in most examples before me, and equal in length to joints 5 and 6 and the spur combined, the spur being a trifle shorter than the joint which bears it, and this joint is fully as long, or a trifle longer than the joint preceding it; hairs of body short and stout with acute points. Cauda short with knob broad and not narrowly constricted at base; the long third joint of the antenna with 4 to 5 small circular or oval sensoria. The pupa is greenish yellow, set with gray hairs, and has very black wing pads; black markings of abdomen very similar to the alate form; a pair of very conspicuous black patches on mesothorax.

Described from specimens taken on *Agropyron glaucum* at Fort Collins, Colo., May 30, 1911. Fairly common.

Apterous Viviparous Female.—A rather long narrow bodied louse, of a rather uniform rusty yellow color when fully mature but with a distinct darker brown, somewhat broken stripe extending longitudinally the whole length of the body on either side of the median line; eyes dark red; legs and antenna dusky yellow, the latter with the terminal joints blackened; number of joints 5; joints 4 and 5 and the spur sub-equal. Antenna less than one-third the length of the body; legs short and rather weak; cornicles raised but little above the surface, broader at base than they are long; cauda knobbed; the entire surface of body set with short, stout gray hairs.

A letter from Mr. E. O. G. Kelly, dated Wellington, Kansas, October 6, 1908, states that he has taken this louse in several places throughout the Northwest, both last year and the present summer.

Agropyron glaucum is the only food plant upon which we have taken this louse. The colonies rest upon the upper surface of the harsh leaves of this grass and are usually accompanied by small ants.

***Chaitophorus artemisiae* n. sp.** (Plate XVI, Figs. 13-16.)

Alate Viviparous Female.—Abdomen cinnamon brown, head and thorax brownish black; tibiae and basal portion of third joint of

antenna pale yellowish; tips of tibiae and tarsi very black; veins and stigma of wings dusky; cornicles short and stout and broadest at base, where the diameter just about equals the length. Length of body 1.40 to 1.50 mm.; wing 2.25 mm.; antenna 1.70 mm.; hind tibiae .85 mm. Joints of antenna: III .40; IV .29; V .27; VI .11; filament .58 mm.; sensoria about 4, on joint 3.

Described from specimens taken at Boulder, Colo., June 1, 1911, by L. C. Bragg.

I have taken the alate lice at Fort Collins as early as May 25.

Apterous Viviparous Female.—General body color almost uniform brownish black, highly polished throughout; antenna black in distal portion to the middle of the third joint; legs black except the proximal one-half of the tibiae which is yellowish in color; cornicles colored like the body, tuberculate, not longer than broad, cylindrical, without flange; prothorax with stout, blunt tubercles; body, legs and antennae with a few weak hairs; antennae not upon distinct tubercles; vertex moderately convex; cauda small, broader than long; antennal joints about as follows: III .34; IV .26; V .23; VI .13; VII .53 mm.; length of body 1.70 to 2 mm.; antenna 1.40 mm.; sensoria 1 or 2, on joint 3. Figure 13 is of a stem ♀.

Apterous ♂ ♂ and oviparous ♀ ♀ were seen in September upon the same host plant but have not been described.

While this louse does not seem to be very common, it frequently becomes very abundant upon individual plants of *Artemisia dracunculoides*.

The younger larvae are decidedly green in color.

EXPLANATION OF PLATE XVI.

Atarsos grindeliae: 1, alate agamic female; 2, apterous form of same; 3, antenna; 4, cornicle; 5, footless tibia of alate form; 6, antenna of apterous form.

Brachycolus tritici: 7, apterous, and 8, alate viviparae; 9, antenna of alate form.

Chaitophorus agropyronensis: 10, alate and 11, apterous viviparae; 12, antenna of alate form.

Chaitophorus artemisiacae: 13, stem-mother; 14, alate agamic form; 15, antenna of alate form; and 16, third joint of antenna of apterous summer form of same louse, but in most examples there is but one sensorium.

All the figures of lice are enlarged 15 times; figures of antennae and other small parts, 52 times.

Drawings by Miss M. A. Palmer.